



## Future of Low Carbon Transport in Indian Cities

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# Future of Low Carbon Transport in Indian Cities

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# Low Carbon Mobility Framework

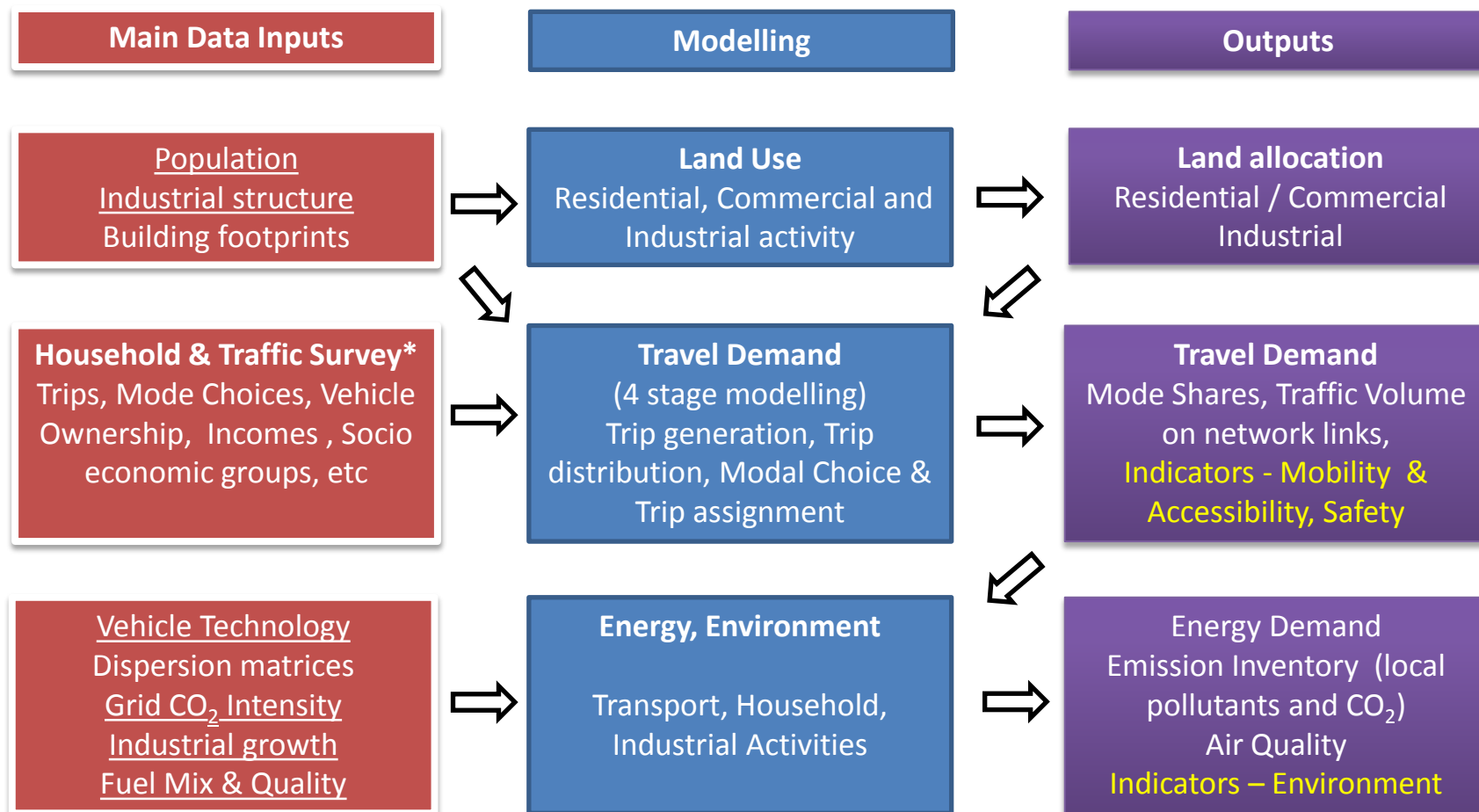
## Definition: Low Carbon Mobility

- Strategies to reduce CO<sub>2</sub> and local emissions from transport without compromising the accessibility and mobility needs of people.

# Modelling approach

- Build on top of conventional transport modelling methodologies
- Include gender and socio economic variables
- Integrate with energy, environment (air quality models)
- Soft link to national assessments

# Modelling Framework for Low Carbon Mobility



Flow of information

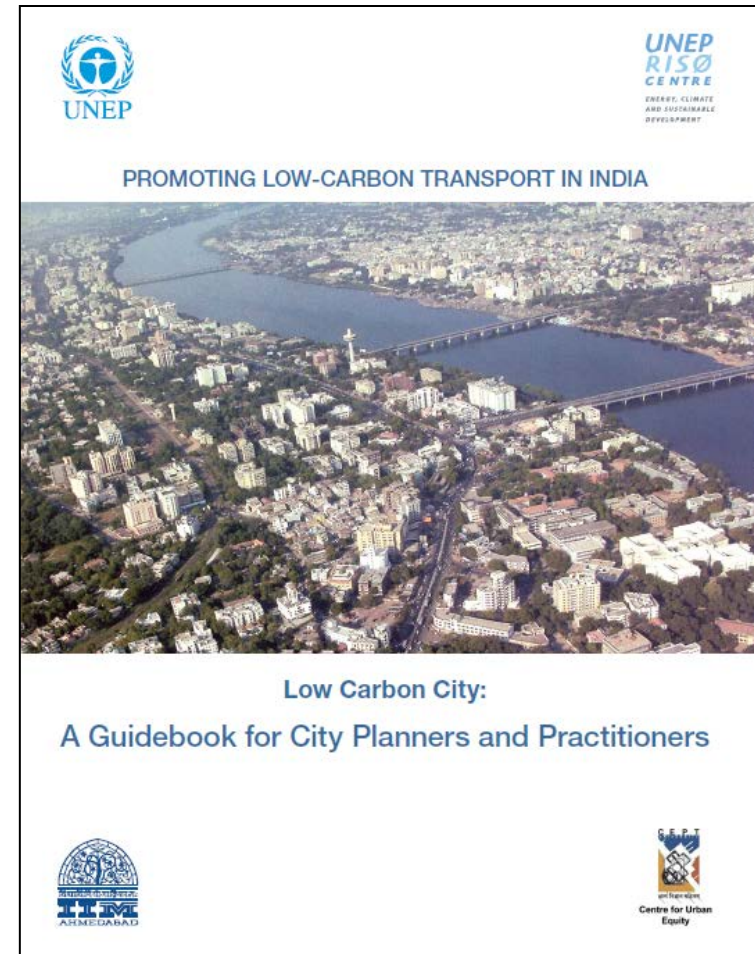
- Information of household surveys is collected using stratified sampling and all income groups, social groups, genders covered
- Underlined parameters can be taken from national assessments

# Linkages to national



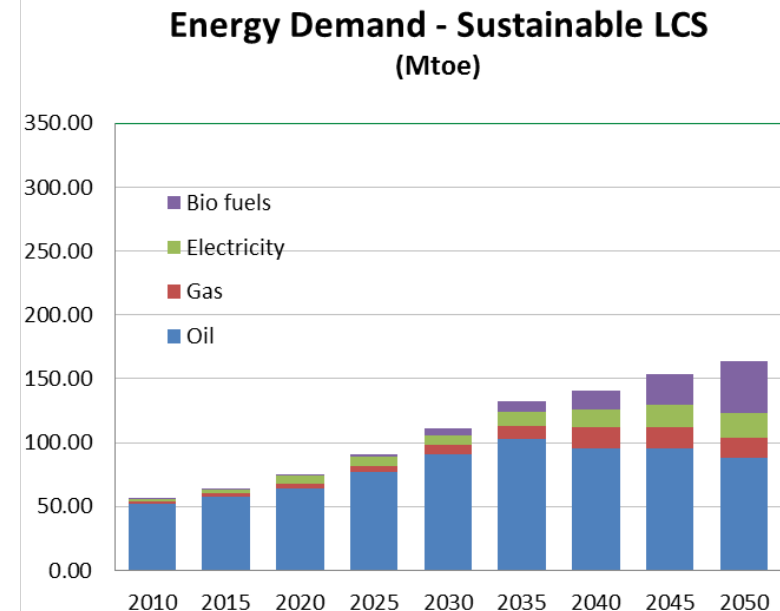
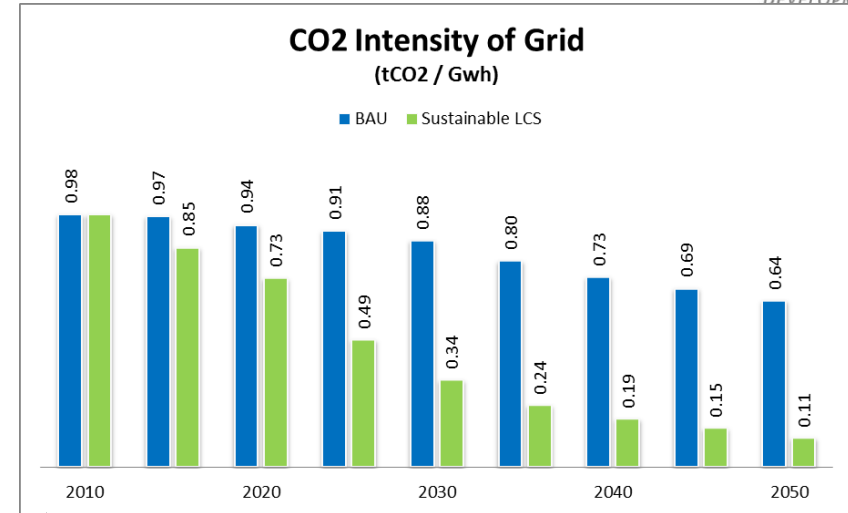
# Guidance for City Planners

- Basic Primer on Climate Change
- Definition of low carbon
- Scenarios
- Inputs for Modelling
- 2° C Scenario for India
- 2° C Scenario and Cities



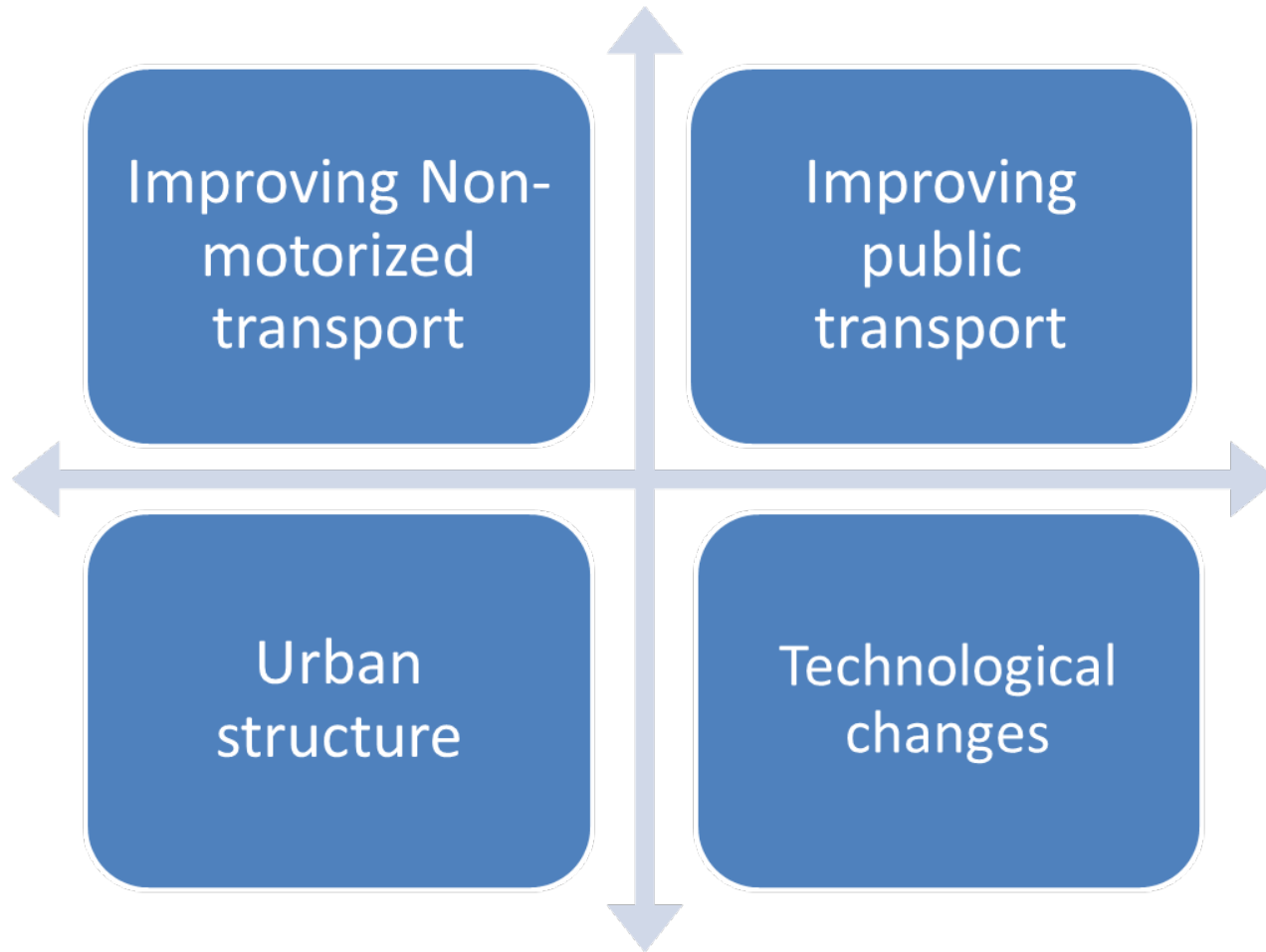
# Inputs for LCMP Modelling from National

- Fuel Mix for vehicles
- Fuel efficiency of vehicles
- CO2 Intensity of electricity
- Industrial growth rate
- Electricity prices
- Per capita incomes
- House hold sizes



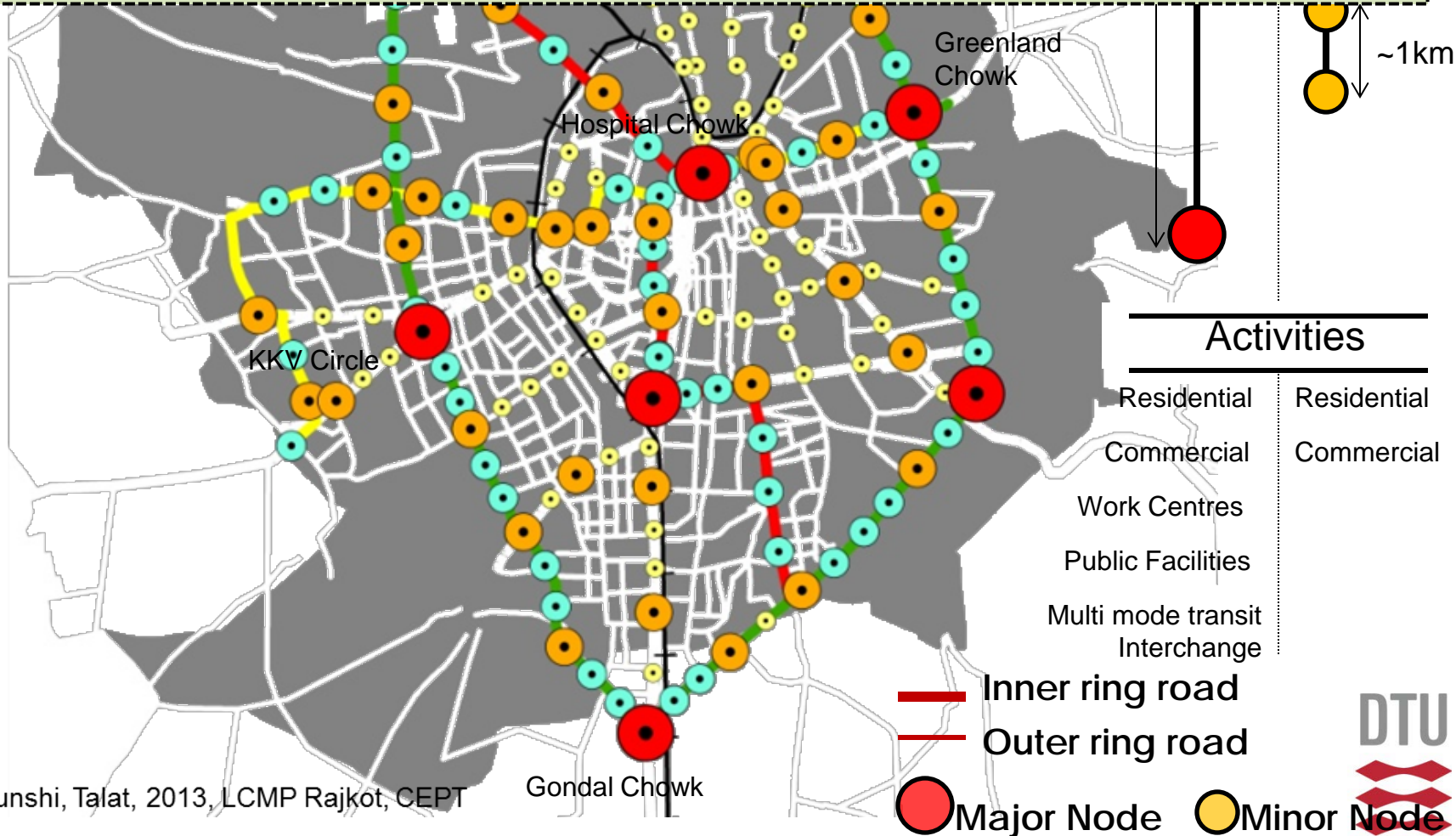
# Results from Cities

# Mitigation Strategies for Urban Transport



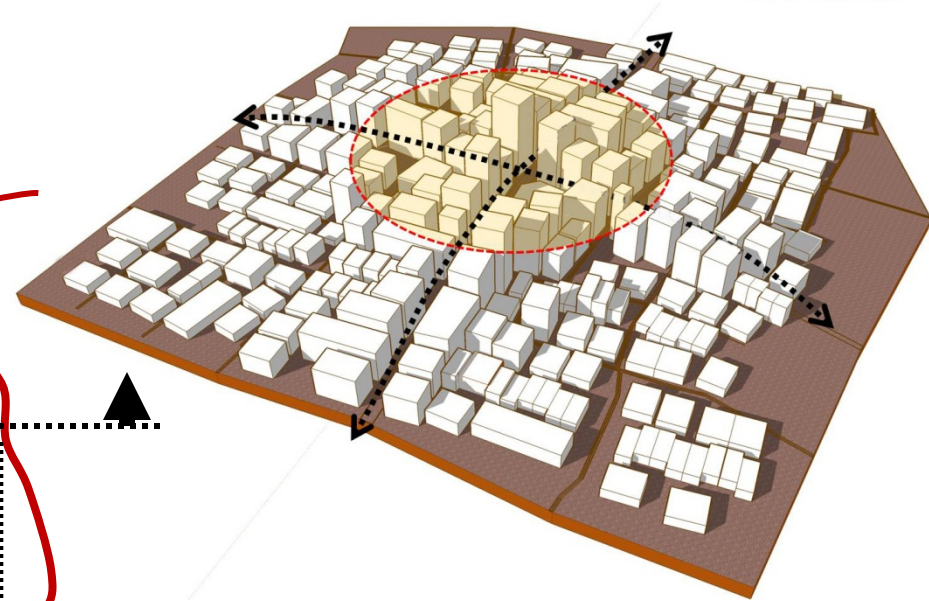
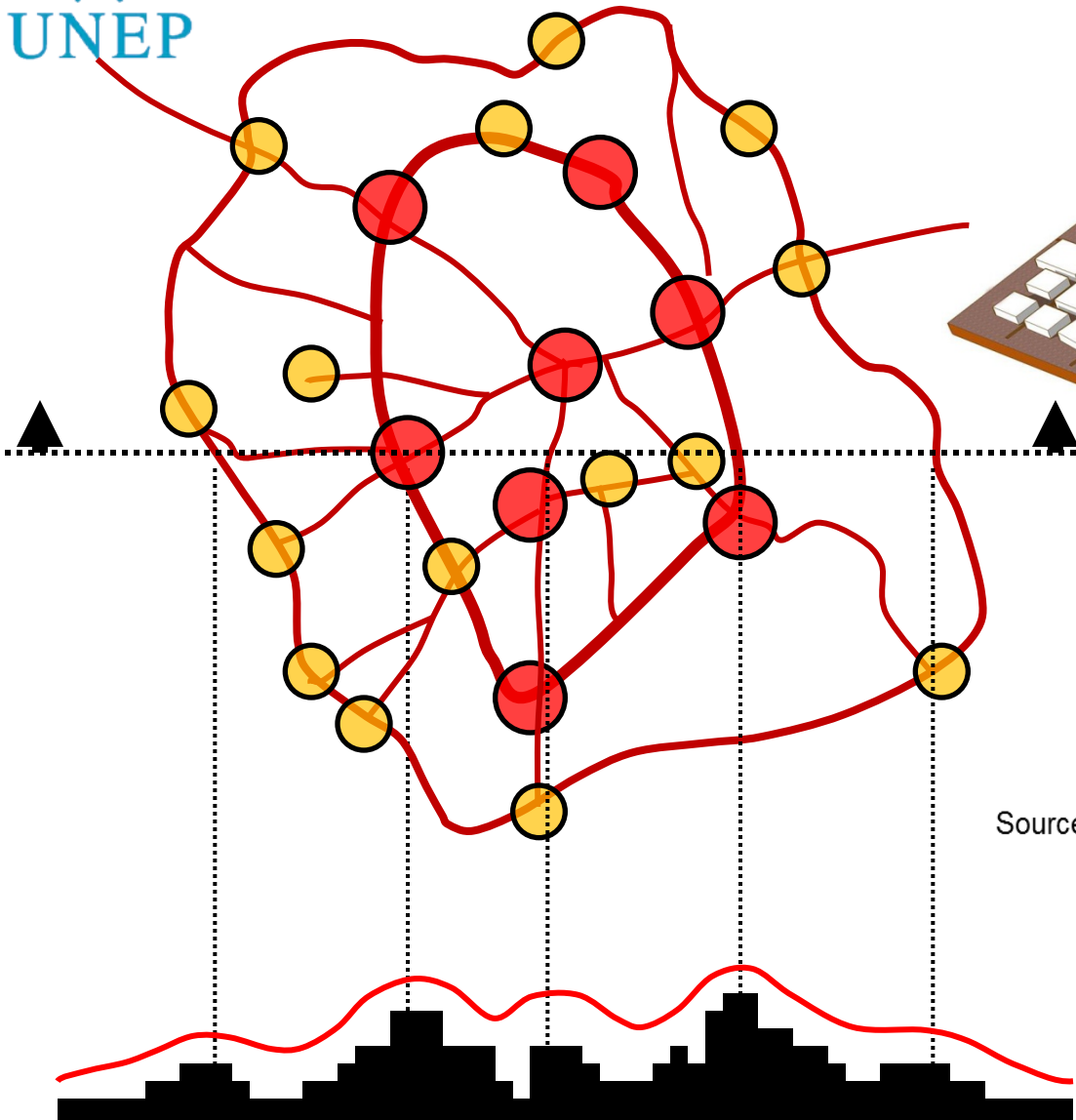
# Node Identification

- ✓ Major and minor nodes have been created at 4km and 1.2km respectively
- ✓ It will encourage concentrated development keeping less vehicle kilometers travelled and encourage use of NMT mode

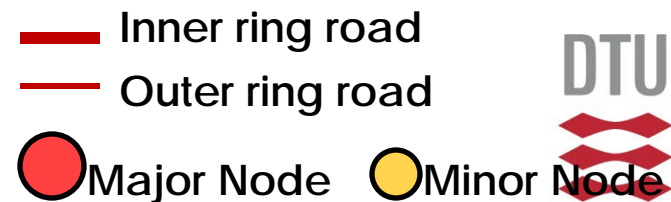




# Node and Corridor Development

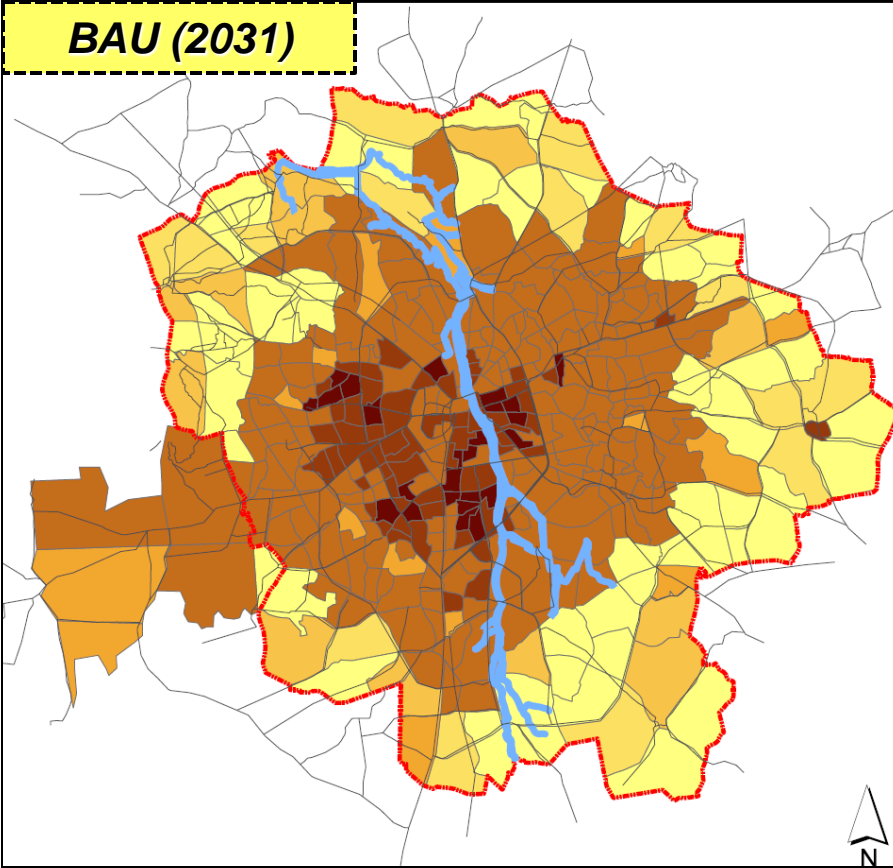


Source: Munshi, Talat, 2013, LCMP Rajkot, CEPT

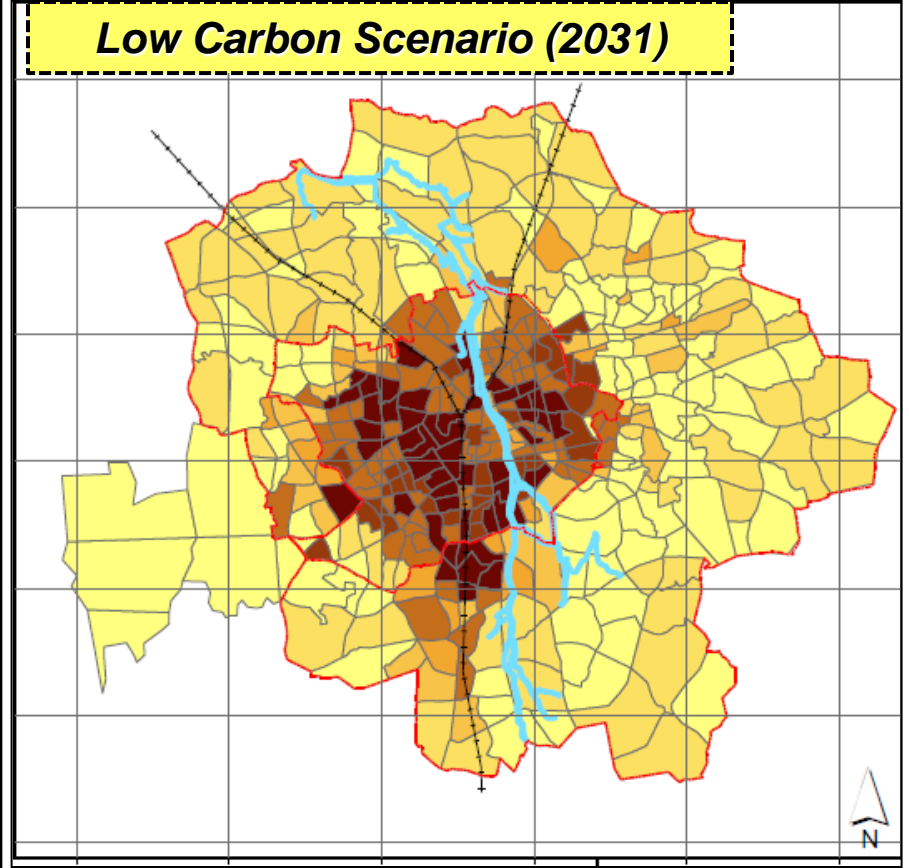


# Land Use Scenarios: Rajkot

**BAU (2031)**

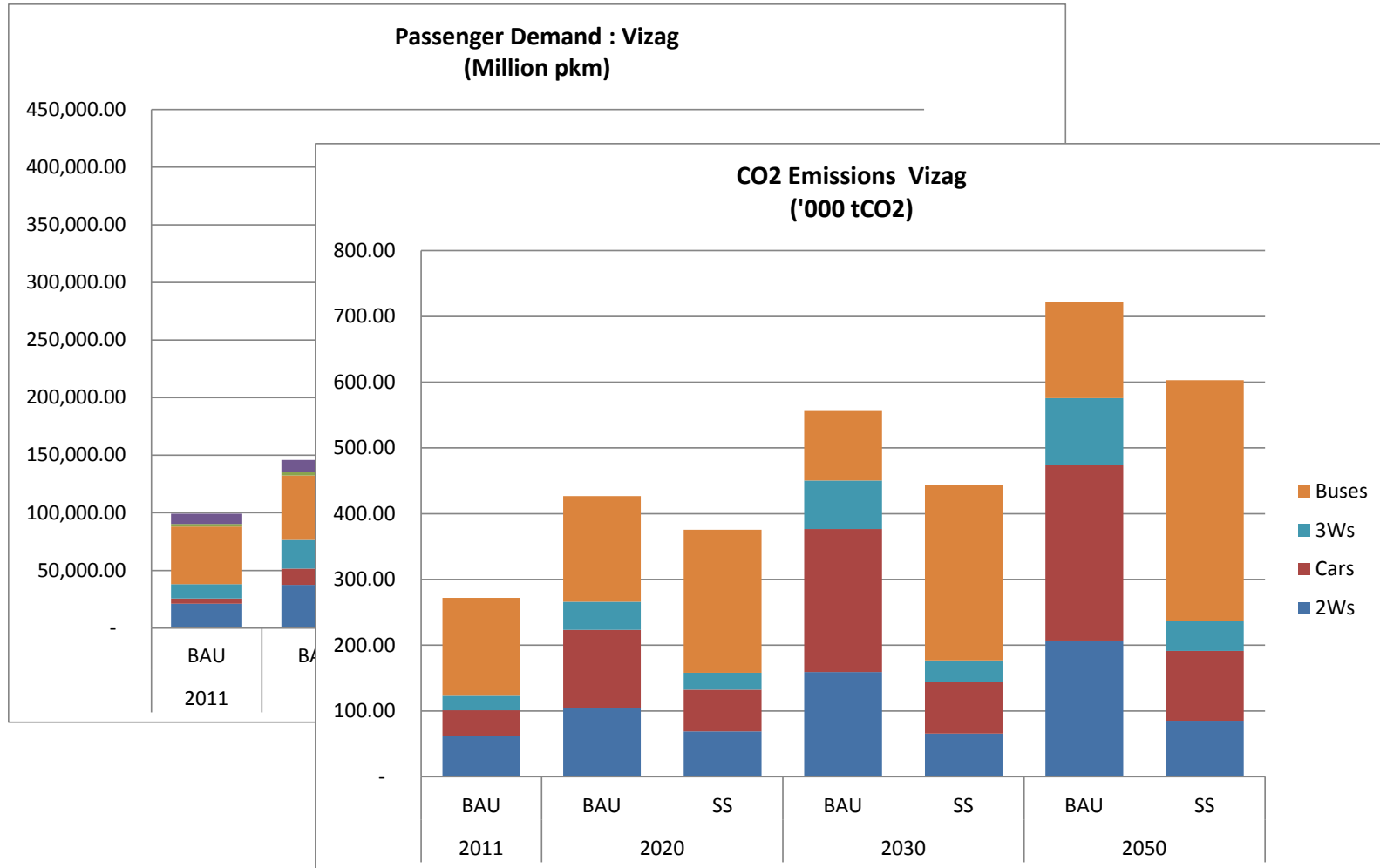


**Low Carbon Scenario (2031)**



- ✓ In the BAU scenario, city sprawls in the direction of road network
- ✓ In the Low Carbon scenario, residential growth is more concentrated

# Passenger Demand & CO<sub>2</sub> Emissions





# Conclusions

- Changes in urban structure (3D), strengthening of public transport , improving infrastructures for cycling and walking are necessary for improving mobility, safety, environment indicators and also deliver mitigation co-benefits
- National policies related to fuel economy, alternative fuels and electricity cleaning necessary to deliver mitigation required for 2 deg C.

# Thank You

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